

Abstract

Proton-conducting polymer membrane comprising polyazoles containing sulfonic acid groups and its use in fuel cells

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The present invention relates to proton-conducting polymer membranes which comprise polyazoles containing sulfonic acid groups and is obtainable by a process comprising the steps

- 10 A) mixing of one or more aromatic and/or heteroaromatic tetraamino compounds with one or more aromatic and/or heteroaromatic carboxylic acids or derivatives thereof which contain at least two acid groups per carboxylic acid monomer, with at least part of the tetraamino compounds and/or the
- 15 carboxylic acids comprising at least one sulfonic acid group, or mixing of one or more aromatic and/or heteroaromatic diaminocarboxylic acids, of which at least part comprises sulfonic acid groups, in polyphosphoric acid to form a solution and/or dispersion,
- B) heating of the solution and/or dispersion obtainable according to step A) under inert gas to temperatures of up to 350°C to form polyazole polymers,
- C) application of a layer using the mixture from step A) and/or B) to a support,
- 20 D) treatment of the membrane from the step C) until it is self-supporting.